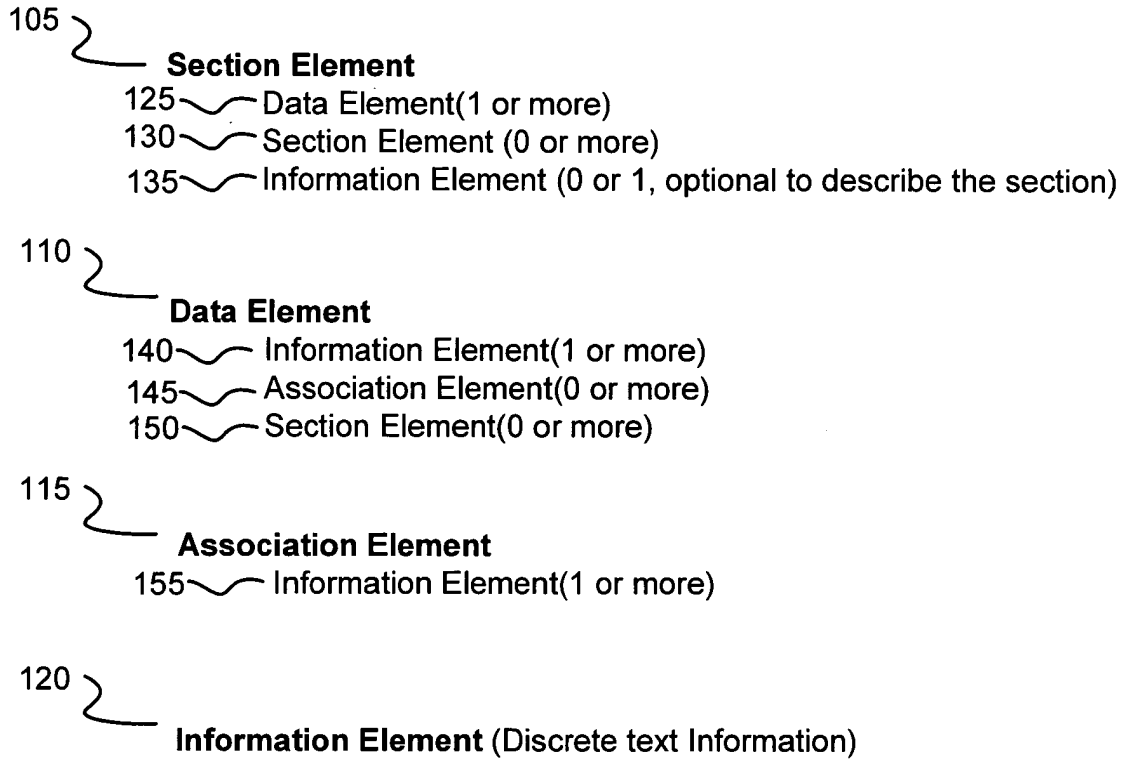

105
Section Element
125 Data Element(1 or more)
130 Section Element (0 or more)
135 Information Element (0 or 1, optional to describe the section)
110
Data Element
140 Information Element(1 or more)
145 Association Element(0 or more)
150 Section Element(0 or more)
115
Association Element
155 Information Element(1 or more)
120
Information Element (Discrete text Information)

FIG. 1

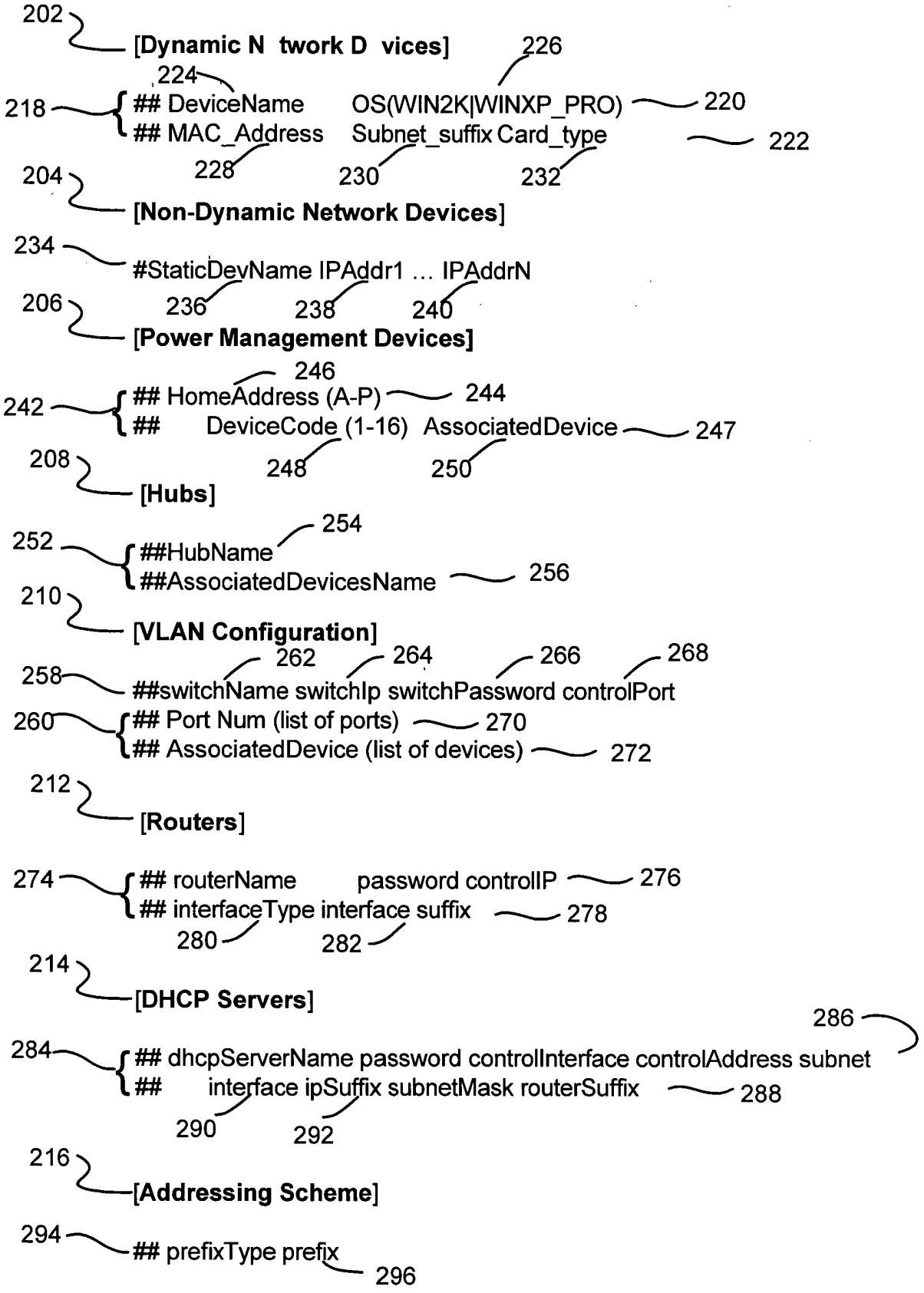
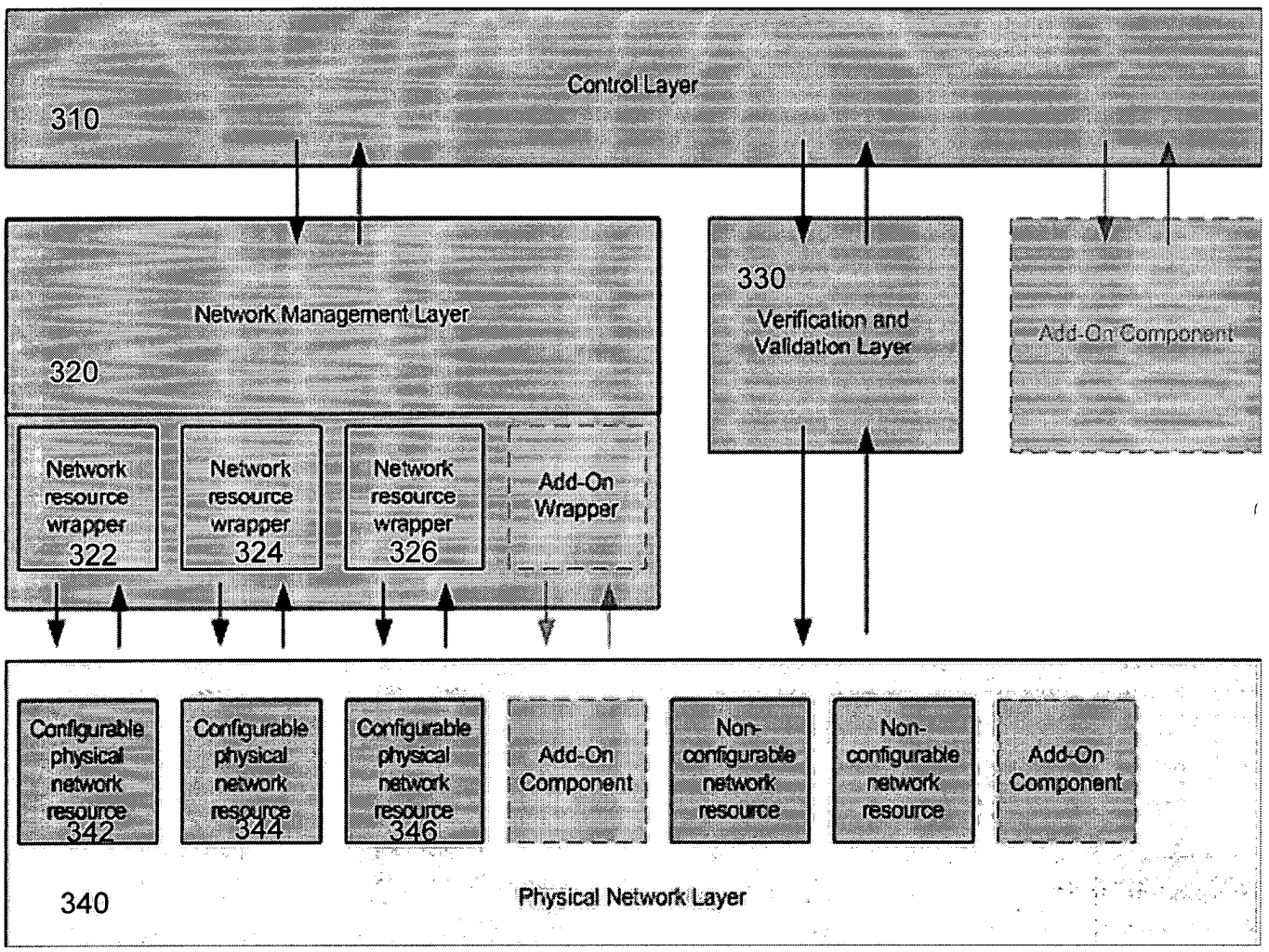

202
[Dynamic N twork D vices]
226
224
218
DeviceName OS(WIN2K|WINXP_PRO)
220
MAC_Address Subnet_suffix Card_type
222
228
230
232
204
[Non-Dynamic Network Devices]
234
#StaticDevName IPAddr1 ... IPAddrN
206
236
238
240
[Power Management Devices]
246
242
HomeAddress (A-P)
244
DeviceCode (1-16) AssociatedDevice
247
248
250
208
[Hubs]
254
252
##HubName
##AssociatedDevicesName
256
210
[VLAN Configuration]
262
264
266
268
258
##switchName switchIp switchPassword controlPort
260
Port Num (list of ports)
270
AssociatedDevice (list of devices)
272
212
[Routers]
274
routerName password controlIP
276
interfaceType interface suffix
278
280
282
214
[DHCP Servers]
286
284
dhcpServerName password controlInterface controlAddress subnet
interface ipSuffix subnetMask routerSuffix
288
290
292
216
[Addressing Scheme]
294
prefixType prefix
296
200

FIG. 2


Control Layer
310
Network Management Layer
320
330
Verification and Validation Layer
Add-On Component
Network resource wrapper 322
Network resource wrapper 324
Network resource wrapper 326
Add-On Wrapper
Configurable physical network resource 342
Configurable physical network resource 344
Configurable physical network resource 346
Add-On Component
Non-configurable network resource
Non-configurable network resource
Add-On Component
340
Physical Network Layer

300

FIG. 3

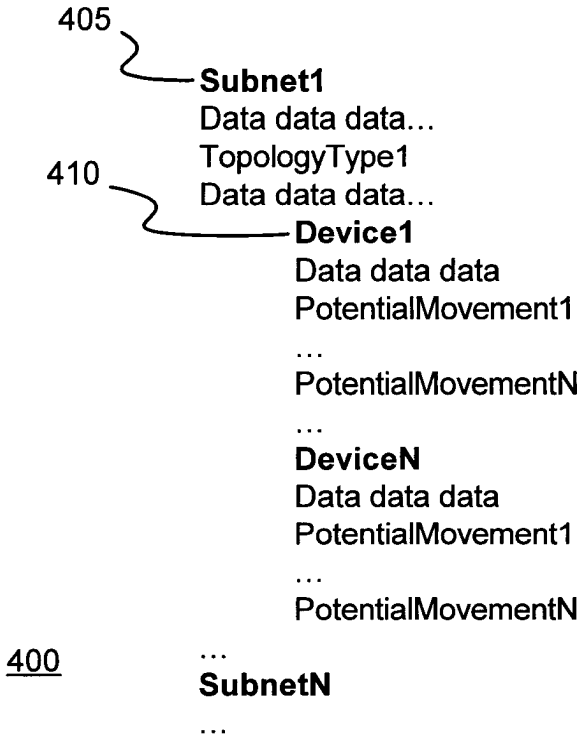

405
Subnet1
Data data data...
TopologyType1
410
Data data data...
Device1
Data data data
PotentialMovement1
...
PotentialMovementN
...
DeviceN
Data data data
PotentialMovement1
...
PotentialMovementN
400
...
SubnetN
...

FIG. 4

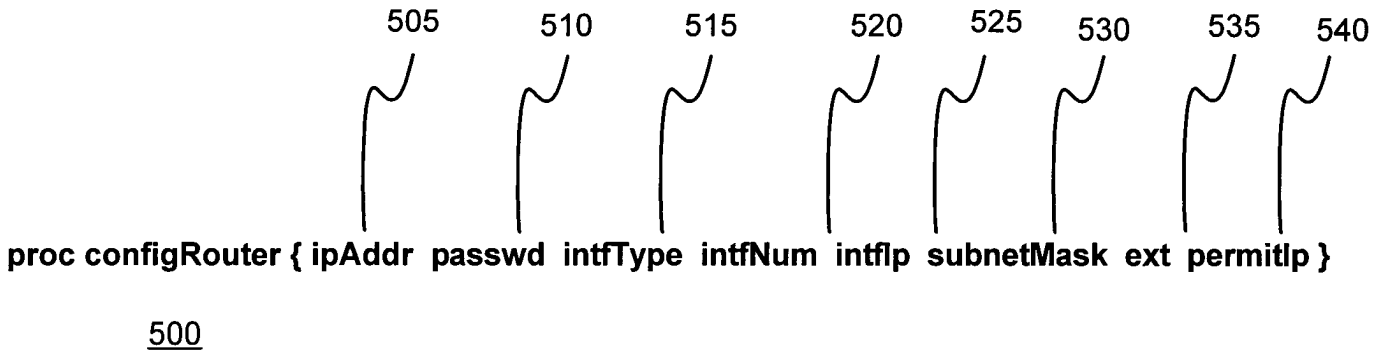

505
510
515
520
525
530
535
540
proc configRouter { ipAddr passwd intfType intfNum intfIp subnetMask ext permitIp }
500

FIG. 5

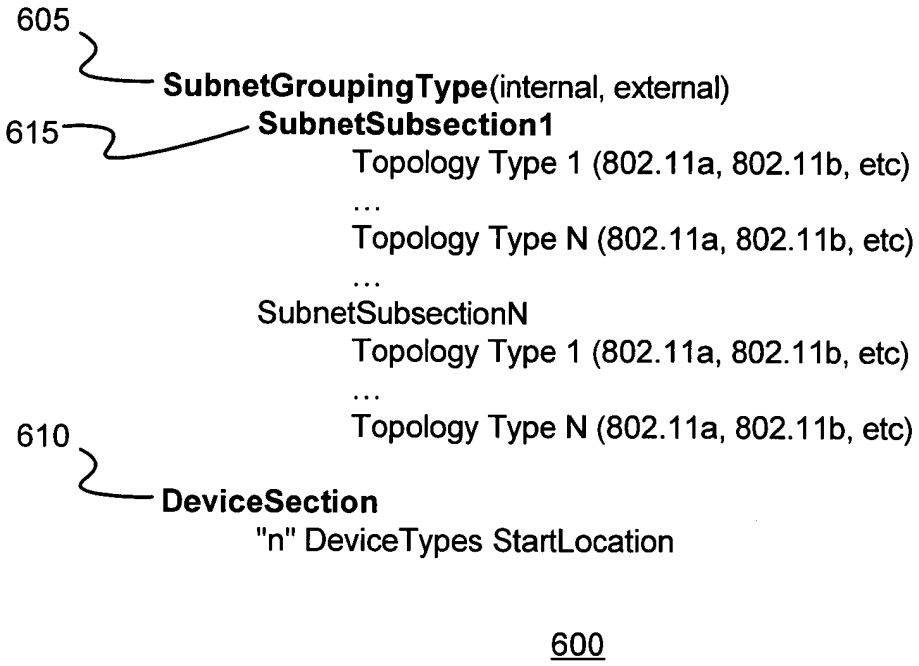

605
SubnetGroupingType(internal, external)
615
SubnetSubsection1
Topology Type 1 (802.11a, 802.11b, etc)
...
Topology Type N (802.11a, 802.11b, etc)
...
SubnetSubsectionN
Topology Type 1 (802.11a, 802.11b, etc)
...
Topology Type N (802.11a, 802.11b, etc)
610
DeviceSection
"n" DeviceTypes StartLocation
600

FIG. 6

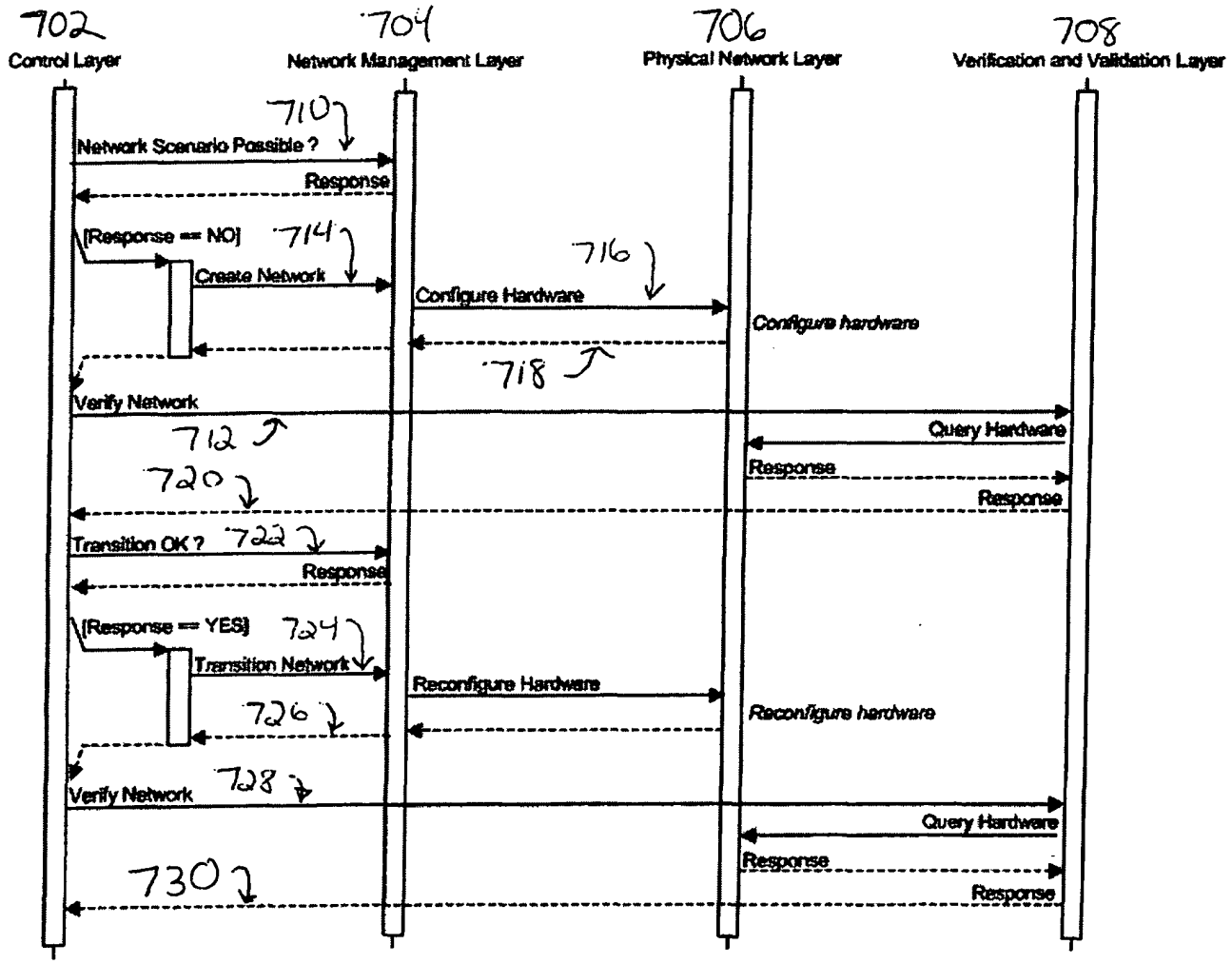

702
Control Layer
704
Network Management Layer
706
Physical Network Layer
708
Verification and Validation Layer
710
Network Scenario Possible ?
Response
[Response == NO]
714
Create Network
716
Configure Hardware
Configure hardware
718
Verify Network
712
Query Hardware
Response
720
Response
Transition OK ?
722
Response
[Response == YES]
724
Transition Network
Reconfigure Hardware
Reconfigure hardware
726
Verify Network
728
Query Hardware
Response
730
Response
700

FIG. 7

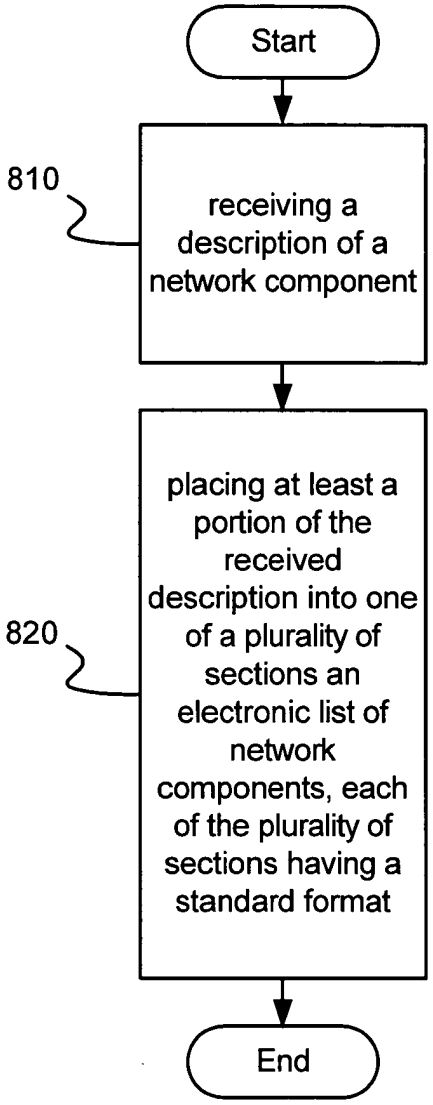

Start
810
receiving a description of a network component
820
placing at least a portion of the received description into one of a plurality of sections an electronic list of network components, each of the plurality of sections having a standard format
End

FIG. 8

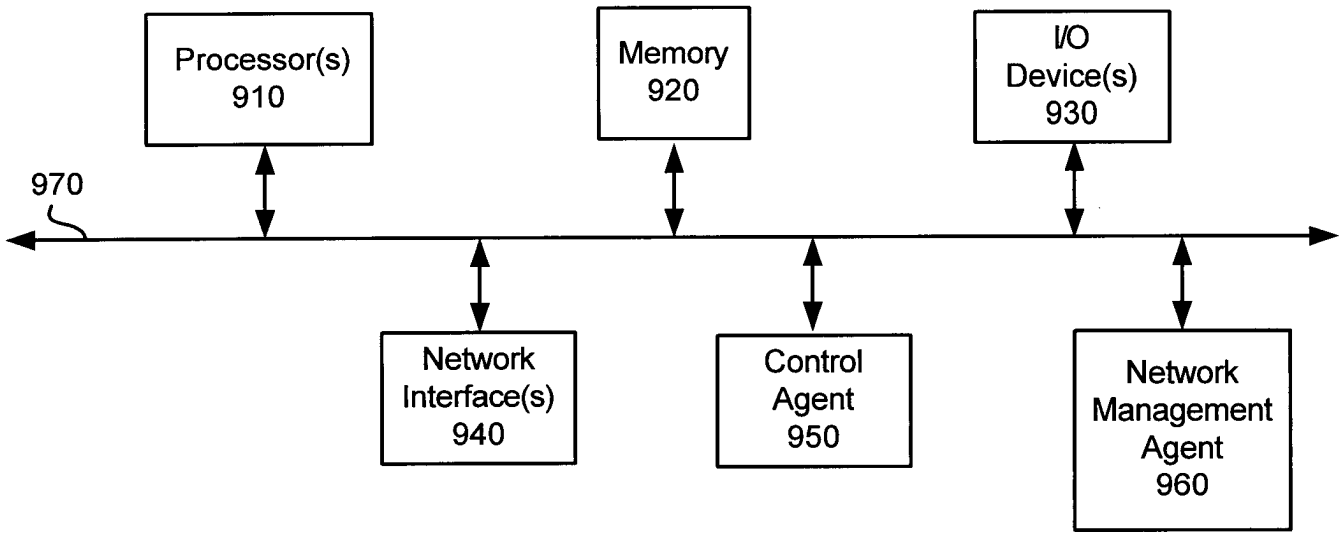

Processor(s)
910
Memory
920
I/O
Device(s)
930
970
Network
Interface(s)
940
Control
Agent
950
Network
Management
Agent
960
900

FIG. 9

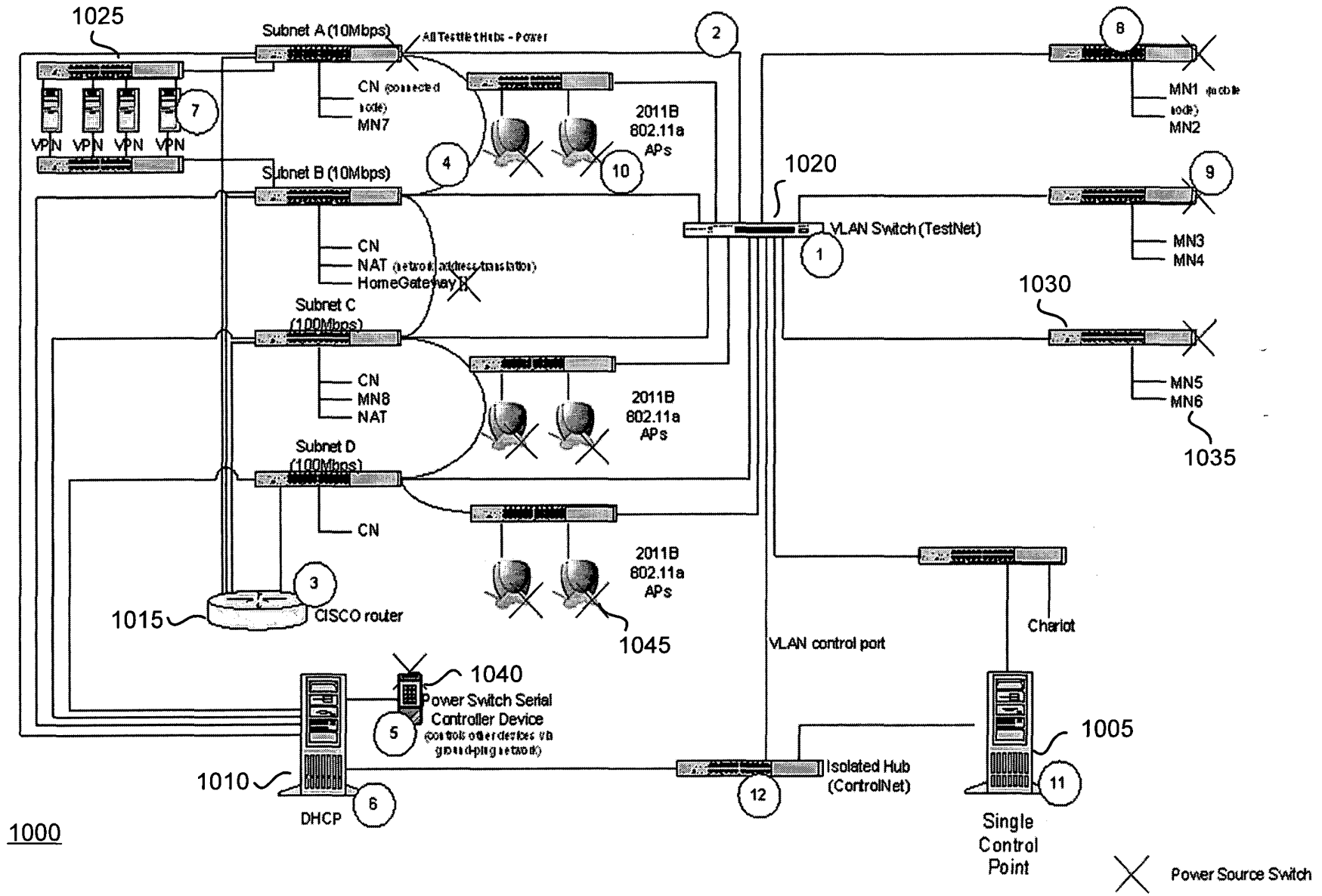

1025
Subnet A (10Mbps)
All Testbed Hubs - Power
2
8
CN (connected node)
MN7
MN1 (mobile node)
MN2
VPN VPN VPN VPN
7
2011B 802.11a APs
4
10
1020
Subnet B (10Mbps)
9
VLAN Switch (TestNet)
1
CN
NAT (network address translation)
HomeGateway
MN3
MN4
1030
Subnet C (100Mbps)
CN
MN8
NAT
2011B 802.11a APs
MN5
MN6
1035
Subnet D (100Mbps)
CN
2011B 802.11a APs
3
1015
CISCO router
1045
VLAN control port
Chariot
1040
Power Switch Serial Controller Device
(controls other devices via ground-ping network)
5
1005
1010
DHCP
6
Isolated Hub (ControlNet)
12
11
Single Control Point
Power Source Switch
1000

FIG. 10